

Figure 1 Pixel's circuitry obscures sensitive area

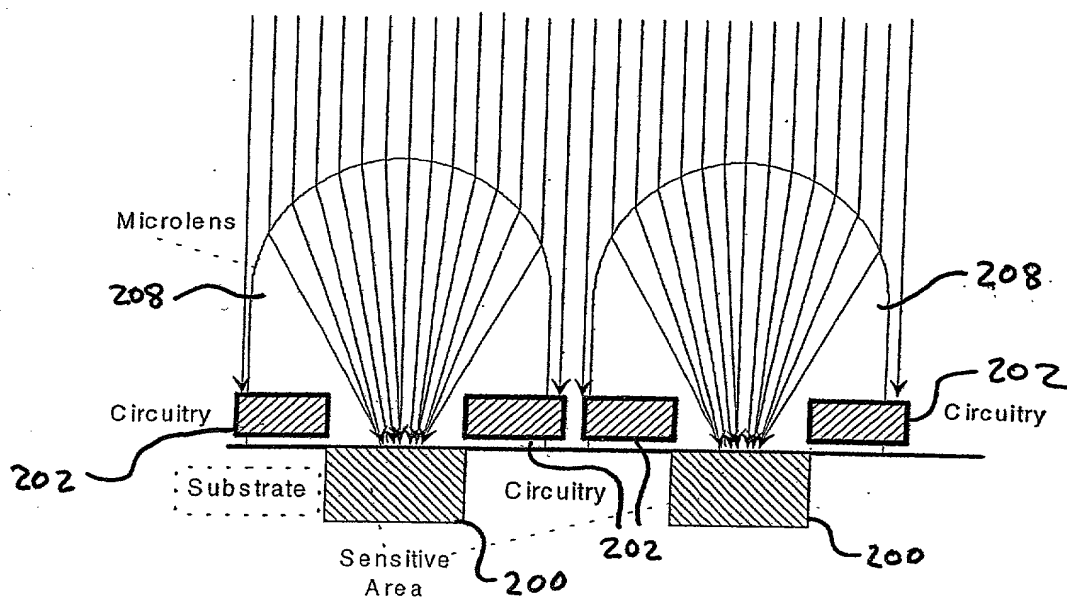


Figure 2 Microlens focuses most of the light on sensitive area

[illegible][illegible]

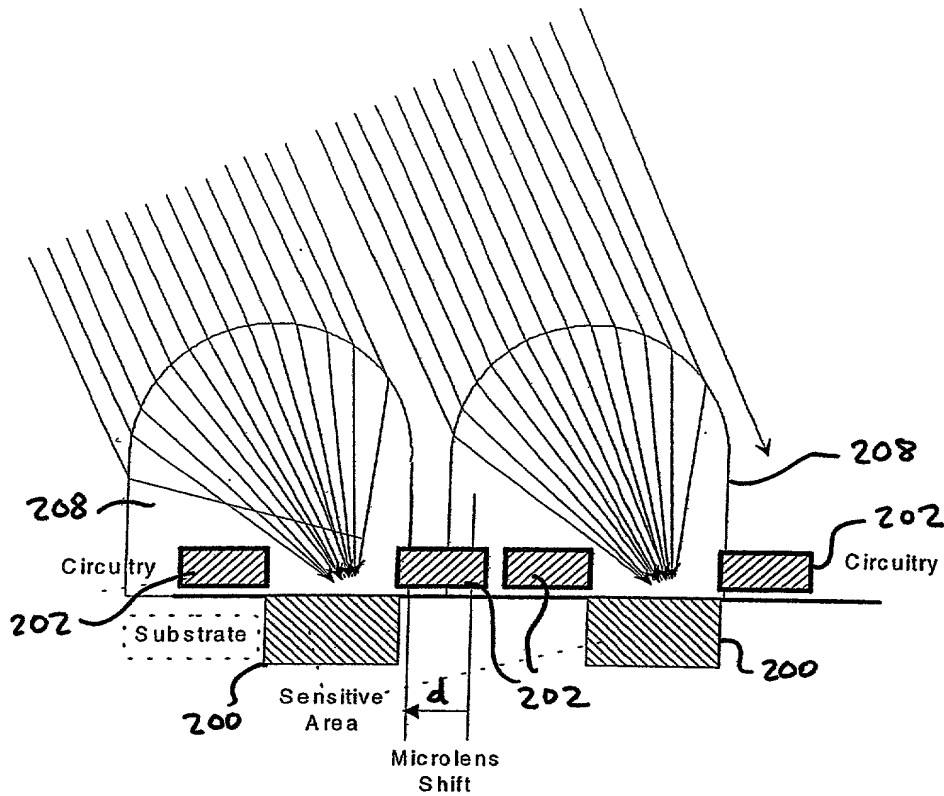


Figure 5 Off-axis illumination with shifted microlens

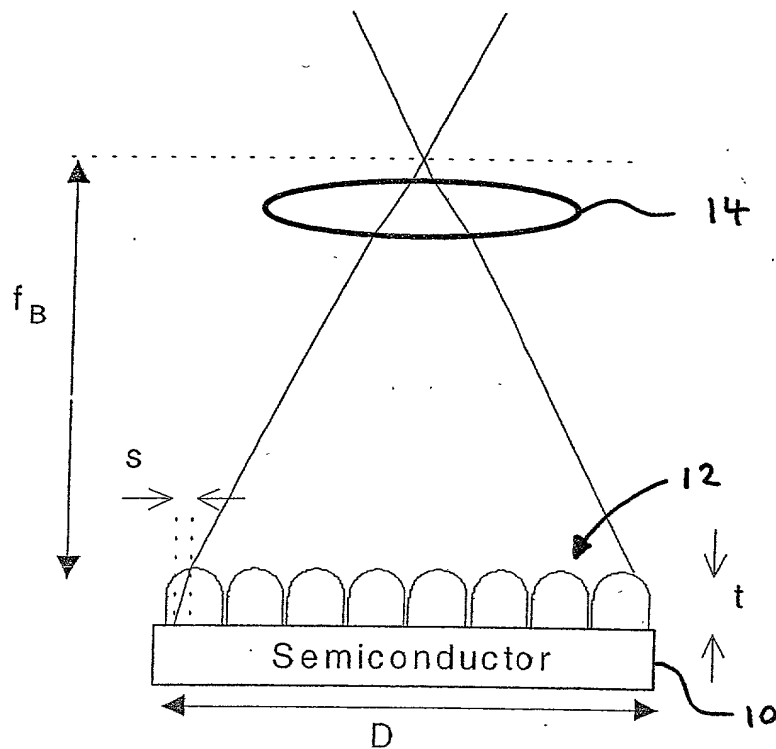


Figure 6 Microlens Shift Approximation

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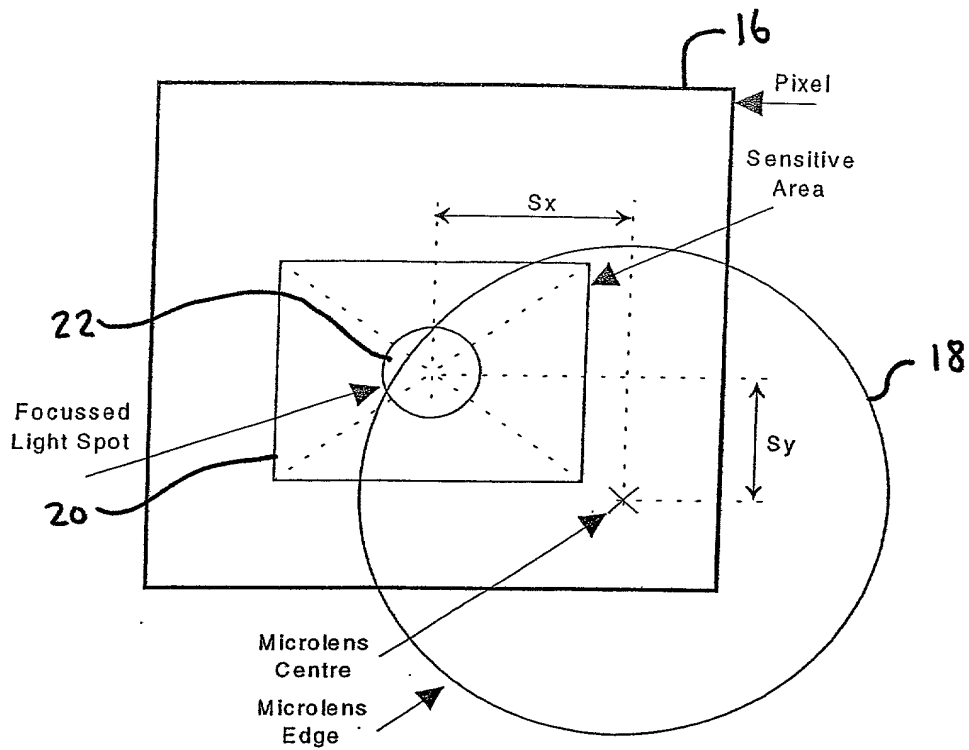


Figure 7 Pixel at Top-Left of array with shifted microlens

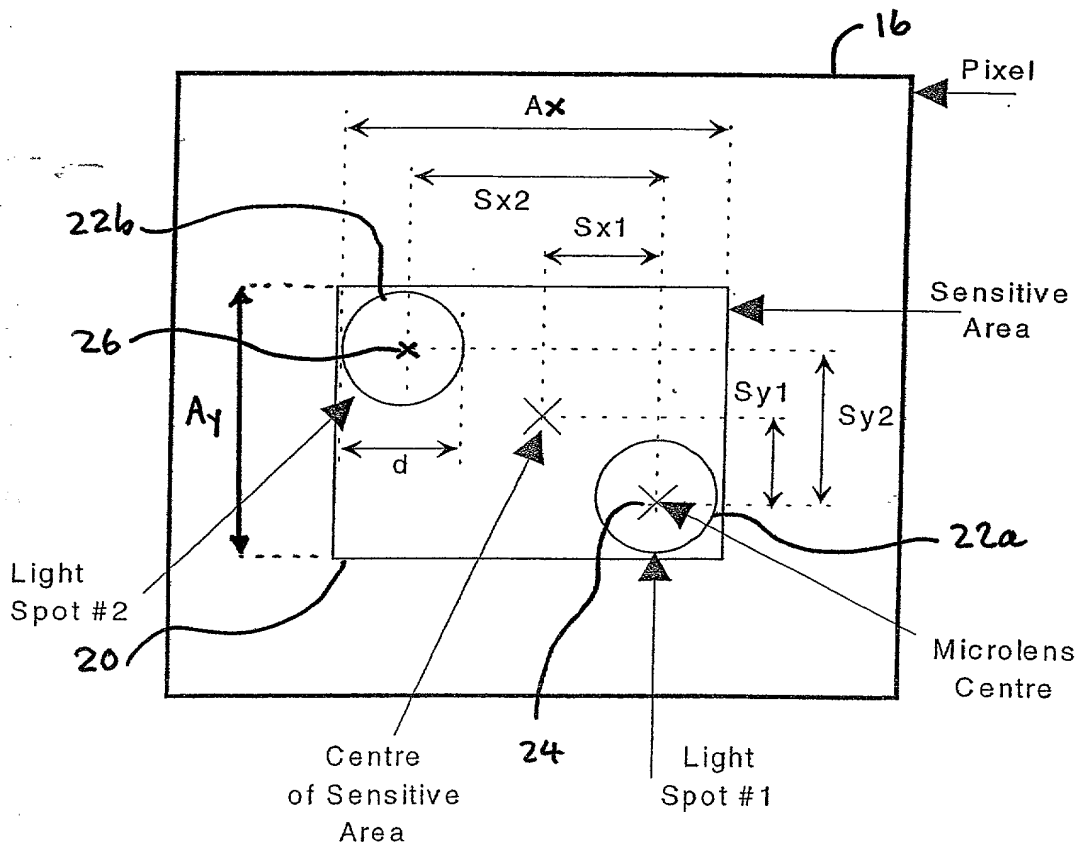


Figure 8 Pixel plan view with different primary lenses

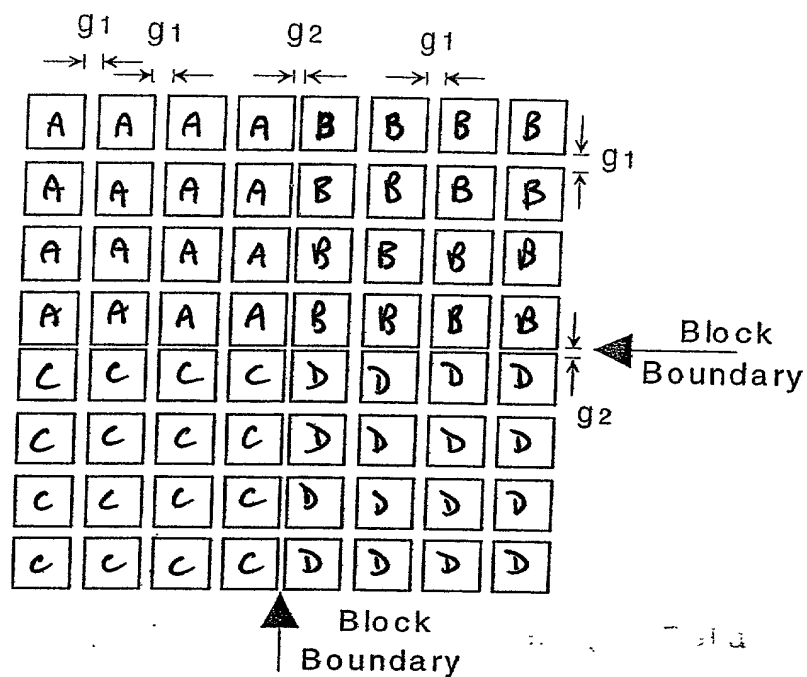


Figure 9 Block shift of microlenses – narrower gaps

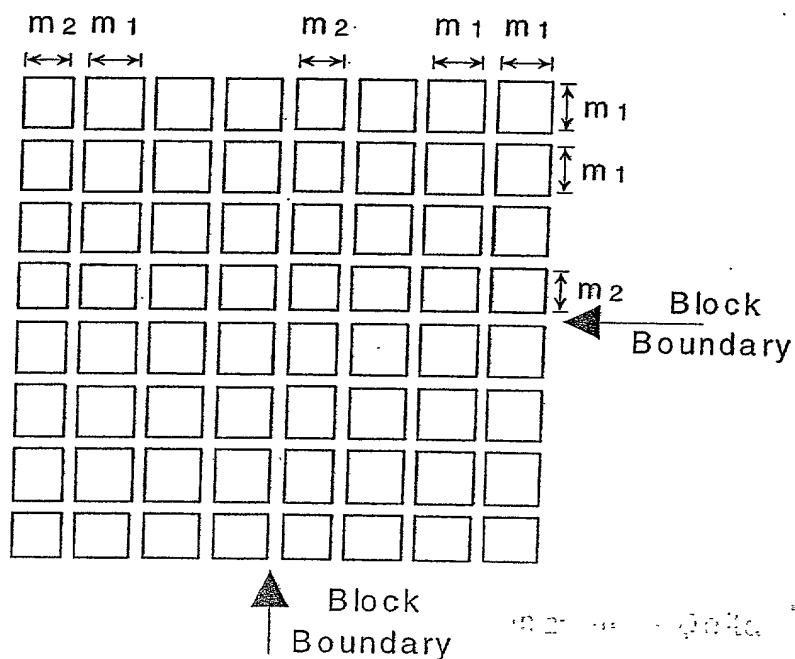


Figure 10 Block shift of microlenses - smaller lenses

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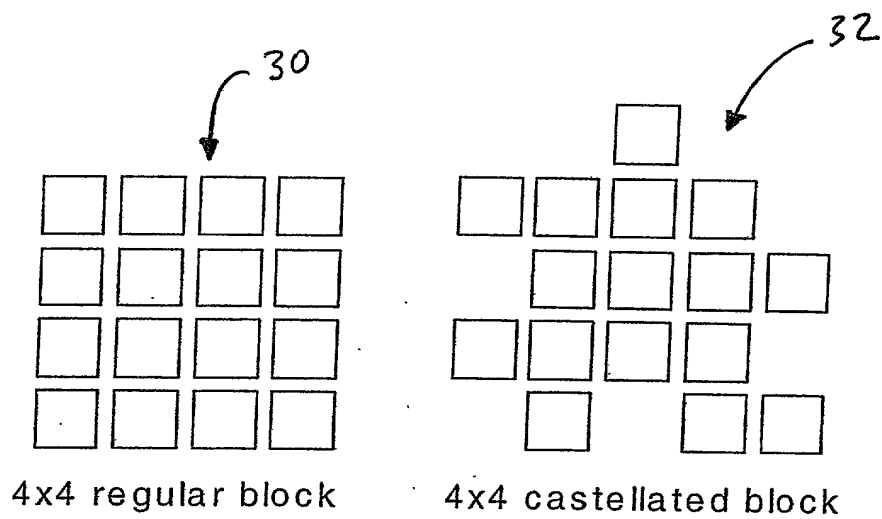


Figure 11 Regular and castellated blocks

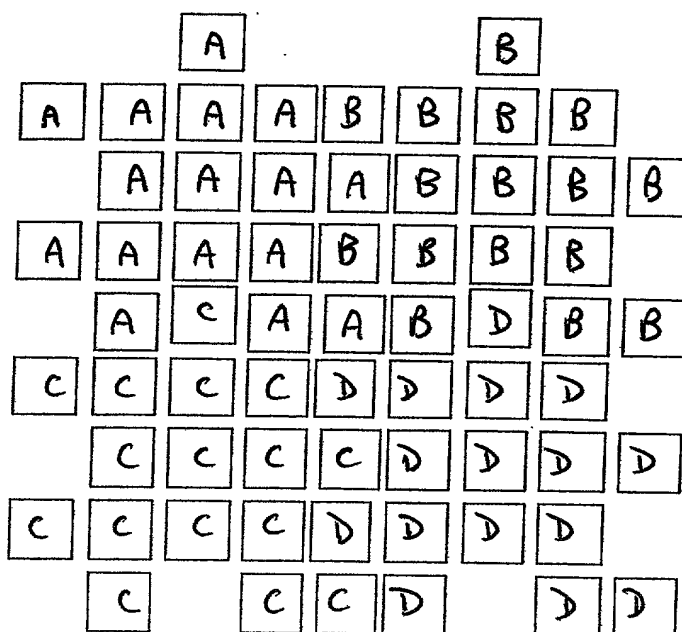


Figure 12 Narrow gaps using castellated blocks

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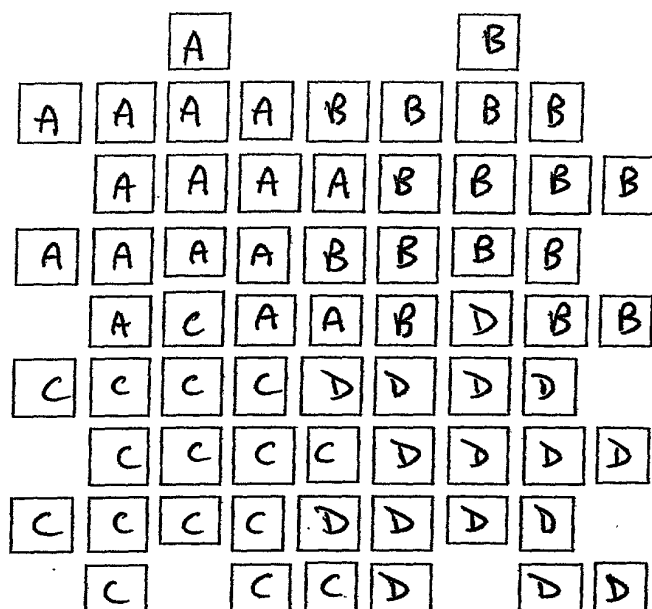
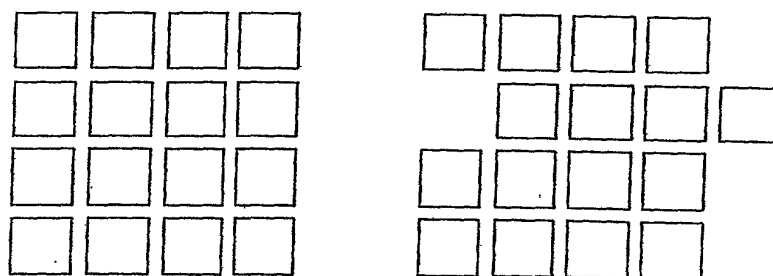


Figure 13 Varying microlens sizes with castellated blocks



4x4 regular block

4x4 block with
one shifted microlens

Figure 14 Modified block which tessellates